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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,900	10/22/2003	Jacobus Johannes Cornelis Geerlings	TS1288 (US)	6359
23632	7590	05/19/2008		
SHELL OIL COMPANY P O BOX 2463 HOUSTON, TX 772522463			EXAMINER HENDRICKSON, STUART L	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			05/19/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/690,900

**Applicant(s)**

GEERLINGS ET AL.

**Examiner**

Stuart Hendrickson

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date 2/26/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The RCE is accepted.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '744 taken with JP '153 and Goldberg.

EP '744 teaches, in columns 4 and 6 especially, purifying carbon dioxide by desorbing from an amine at elevated temperature. The elevated pressure expected is noted as well. The temperature and pressure overlaps the claimed ranges, rendering them prima-facie obvious. This differs in not teaching the claimed use of the carbon dioxide. '153 teaches in the abstract treating fine silicate particles (size overlapping the claimed range) with carbon dioxide. Using the purified CO<sub>2</sub> of '744 in the JP process is an obvious expedient to provide carbon dioxide to a process needing it; note In re Kamlet 88 USPQ 106, further in view of the scheme proposed by Goldberg, especially on pg. 12.

Concerning claim 2, using heat exchange is an obvious expedient to optimize economic efficiency by reducing heating costs. Concerning claim 13 and the like, using a high temperature to carbonate is an obvious expedient to make the reaction go faster.

Applicant's arguments filed 2/26/08 have been fully considered but they are not persuasive. Applicant asks for clarification of the foreign priority. Applicant was notified that no documents were received, and in response has not submitted any. So it should be of no surprise that the status of foreign priority is that it is not accepted. When this status changes, applicant will be notified. Goldberg and '744 suggest the use of off-gassed carbon dioxide in sequestration. JP '153 is one of such sequestration methods. It is an obvious expedient to use heat from one step if it is needed in another step since it saves energy and thus money. The arguments are essentially mooted by the inclusion of the Goldberg reference, which neatly ties the other references together. Concerning details such as how exactly the heat of the CO<sub>2</sub> is used, this is deemed an obvious engineering variant to save heating costs. The argument that EP '744 teaches many things, some of which are not claimed, is not persuasive in view of what is taught

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which is germane to the claims. EP '744 need not explicitly recognize that carbonation of silicate releases heat (arguments pg. 4)- col. 2 line 41 thereof teaches hot CO<sub>2</sub>. The argument that mineral carbonation is only one use of CO<sub>2</sub> is not persuasive since Goldberg and JP '153 teach it. The alternatives are irrelevant. The fact that silicate carbonation is more difficult than lime carbonation is completely irrelevant to the issues at hand and does not destroy the combination of references proposed, as they deal with mineral carbonation.

Applicant's submissions necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.

/Stuart Hendrickson/  
Stuart Hendrickson  
examiner Art Unit 1793